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load-carrying component of an air suspension system used on machines, automobiles, and buses. A system used on buses consists of an air compressor, an air-supply tank, leveling valves, check valves, bellows, and connecting piping. Basically, an air-spring bellows is a column of air confined within a rubber and fabric container that looks like an automobile tire or two or three tires stacked on top of one another. The check valves admit additional air to the bellows from the air-supply tank to maintain vehicle height when the load is increased, and the leveling valves vent excess air from the bellows when the vehicle rises because of unloading. The vehicle thus remains at a fixed height regardless of load. Although an air spring is flexible under normal loads, it becomes progressively stiffer when compressed under an increased load. Air suspension was introduced on some luxury cars in the late 1950s, but it was dropped after several model years. Recently, new leveling systems have been developed for passenger cars, including air-adjustable rear shock absorbers; some air-spring systems operate without an air compressor.

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